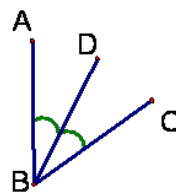


## 2.2 Angle Bisectors

**Angle Bisector**-A ray that divides an angle into 2 congruent angles.

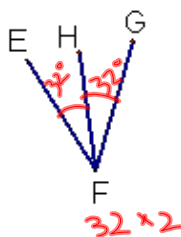
$\overrightarrow{BD}$  bisects  $\angle ABC$   
Therefore,  $\angle ABD \cong \angle DBC$



Example:

$\overrightarrow{FH}$  bisects  $\angle EFG$

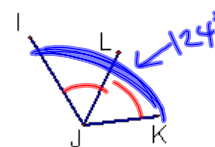
$$\angle EFH \cong \angle HFG$$



If the  $m\angle EFH = 32^\circ$ , then  $m\angle HFG = 32^\circ$ . Find  $m\angle EFG = 64^\circ$

Example:  
 $\overrightarrow{JL}$  bisects  $\angle IJK$

$$\angle IJL \cong \angle LJK$$



$m\angle IJK = 124^\circ$  Find  $m\angle IJL = 62^\circ$   
 $2 \overline{) 124}$

## Using Algebra

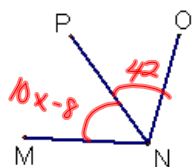
Example:

$\overrightarrow{NP}$  bisects  $\angle MNO$

$$m\angle MNP = 10x - 8$$

$$m\angle PNO = 42^\circ$$

Find  $x$ .



$$10x - 8 = 42$$

$$10x = 50$$

$$x = 5$$

Example:

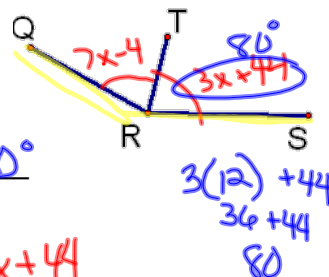
$\overrightarrow{RT}$  bisects  $\angle QRS$

$$m\angle QRT = 7x - 4$$

$$m\angle TRS = 3x + 44$$

Find  $x$ .

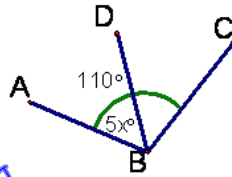
Find  $m\angle QRS = 160^\circ$



$$\begin{array}{r} 7x - 4 = 3x + 44 \\ -3x \quad -3x \\ \hline 4x - 4 = 44 \\ 4x = 48 \\ x = 12 \end{array}$$

\*\*\*\*\*  
 The arc on the angle means that the whole angle,  $\angle ABC$  measures  $110^\circ$   
 \*\*\*\*\*

Example:  
 $\overrightarrow{BD}$  bisects  $\angle ABC$   
 Find  $x$ .



$$5x = \frac{1}{2} 110$$

$$5x = 55$$

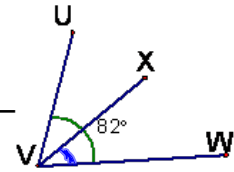
$$x = 11$$

Example:

$\overrightarrow{VX}$  bisects  $\angle UVW$

Find  $m\angle XVW =$  41

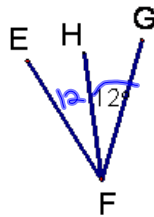
$$\frac{1}{2} 82$$



Example:

$\overrightarrow{FH}$  bisects  $\angle EFG$

Find  $m\angle EFG =$  24



Classwork

**CW**

**Pgs 64-66 #s 1-13, 28-30, 32**

**HW**

**Pgs 64-66 #s 1-22, 28-30, 32**